



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,494	04/19/2004	Ken Xiao Kang Zhang	S63.2-11346-US01	3474
490 7590 07/30/2010 VIDAS, ARRETT & STEINKRAUS, P.A. SUITE 400, 6640 SHADY OAK ROAD EDEN PRAIRIE, MN 55344				
EXAMINER				
HUSON, MONICA ANNE				
ART UNIT		PAPER NUMBER		
1791				
MAIL DATE		DELIVERY MODE		
07/30/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* KEN XIAO KANG ZHANG, JEFFREY S. LINDQUIST,  
VICTOR L. SCHOENLE, SCOTT SCHEWE, DAVID PARSONS,  
NAO LEE, and YING XIONG

---

Appeal 2009-014471  
Application 10/827,494  
Technology Center 1700

---

Before BRADLEY R. GARRIS, CHARLES F. WARREN, and  
TERRY J. OWENS, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

Applicants appeal to the Board from the decision of the Primary Examiner finally rejecting claims 2-22 in the Office Action mailed September 17, 2007. In the Appeal Brief, Appellants state that “the rejection

---

<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

of [claims 3 and 21] is not being appealed.” App. Br. 2.<sup>2</sup> The Examiner canceled claims 3 and 21 in the Communication mailed March 13, 2009. Thus, claims 2, 4-20, and 22, remain for consideration on appeal. *See* App. Br. 2. 35 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2007).

We affirm the decision of the Primary Examiner with respect to claims 2, 4-14, 17-20, and 22, and reverse the decision with respect to claims 15 and 16.

Claim 17 illustrates Appellants’ invention of a method of forming a medical device, and is representative of the claims on appeal:

17. A method of forming a medical device comprising the steps of  
placing a parison in a mold having a cavity with a wall form  
substantially conforming to the desired shape of said device,

immersing the mold in a heated liquid fluid to heat the parison, and  
pressurizing the parison to radially expand the parison to contact the  
walls of the mold cavity,

wherein the mold cavity wall contains at least one through-hole  
therein through which the heated liquid fluid enters the mold cavity to  
directly contact the parison when the mold is immersed in the heated fluid  
and through which heated liquid fluid that has entered the mold cavity is  
expelled therefrom when the parison is radially expanded.

Appellants request review of the following grounds of rejection  
advanced on appeal by the Examiner (App. Br. 4):  
claims 2, 4, 5, 7-9, 13, 14, 17, 20, and 22 under 35 U.S.C. § 102(b) over  
Leonhardt (US 5,522,961) (Supp. Ans. 3);  
claims 6, 10-12, 15, and 16 under 35 U.S.C. § 103(a) over Leonhardt (Supp.  
Ans. 4);

---

<sup>2</sup> We considered the Appeal Brief filed April 11, 2008, the Examiner’s Supplemental Answer mailed June 2, 2009, and the Reply Brief filed October 16, 2008.

claim 18 under 35 U.S.C. § 103(a) over Leonhardt in view of Gass-Erb (US 3,766,358) (Supp. Ans. 5); and

claim 19 under 35 U.S.C. § 103(a) over Leonhardt in view of Garrett (US 6,073,540 (Supp. Ans. 6).

Appellants argue the first ground of rejection based on claim 17. App. Br. 12. Appellants argue the second ground of rejection based on the claims as a whole and further on claim 15. Thus, we decide this appeal based on claims 6 and 15-19. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

### Opinion

#### I

With respect to the rejection of claim 17 under § 102(b) over Leonhardt, Appellants submit that the Examiner erred in finding that the four holes 46 of Leonhardt's mold 30 permit entry of heated water when the molded is immersed therein, and expulsion of the heated water when the parison is expanded, thus describing the claimed invention to one of ordinary skill in the art. App. Br. 12; *see* Supp. Ans. 3. *See* Leonhardt col. 3, l. 50 to col. 4, l. 48, and Fig. 2. Appellant argues that Leonhardt's disclosure that "[h]oles 46 provide for the escape of air when the mold is filled by the expanding workpiece," on which the Examiner relies, would describe to one of ordinary skill in this art that holes 46 are sized to permit air to escape and "are not sized or channeled in a way that permits water to enter the cavity and contact the parison as recited in claim 17." App. Br. 12, citing Leonhardt col. 3, ll. 62-64; Reply Br. 2; Supp. Ans. 3. Appellants further argue that if water did enter via holes 46 when the mold is immersed, the mold would completely fill with water leaving no air to expel as taught by Leonhardt, and Leonhardt would have observed this condition as the

mold is transparent. App. Br. 12-13, citing Leonhardt col. 4, ll. 12-14 and 28-30, and col. 3, ll. 52-53; Reply Br. 2-4.

The Examiner responds “that water will flow at its own will, and if there is a hole in something that is immersed in a water bath, the water will inherently flow through the hole.” Supp. Ans. 7.

On this record, we disagree with Appellants that the Examiner erred in finding that Leonhardt’s holes 46 would permit water to enter immersed mold 30 and contact the parison tubing in the mold as specified in claim 17. Indeed, we find that one of ordinary skill in this art would have reasonably inferred from Leonhardt that water would enter holes 46 to some extent, and entry of the water in lower holes 46 of immersed mold 30 would permit the water to contact the parison to some extent, leaving air to be expelled, along with the water, by the expanding parison as taught by Leonhardt.<sup>3</sup> This is all that claim 17 requires as there is no limitation that the immersed mold must completely fill with water which enters through the at least one through-hole in the mold. Thus, as found by the Examiner, Leonhardt would have described the claimed invention encompassed by claim 17 to one of ordinary skill in the art, including all the limitations thereof arranged as required therein. *See, e.g., In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997), and cases cited therein.

Accordingly, based on our consideration of the totality of the record

---

<sup>3</sup> It is well settled that a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in the art would have reasonably been expected to draw therefrom. *See, e.g., In re Frisch*, 972 F.2d 1260, 1264-65 (Fed. Cir. 1992); *In re Preda*, 401 F.2d 825, 826-27 (CCPA 1968).

before us, we have weighed the evidence of anticipation found in Leonhardt with Appellants' countervailing evidence of and argument for non-anticipation and conclude, by a preponderance of the evidence and weight of argument, that the claimed invention encompassed by appealed claims 2, 4, 5, 7-9, 13, 14, 17, 20, and 22 would have been anticipated as a matter of fact under 35 U.S.C. § 102(b).

## II

Claims 6, 15, and 16, dependent on claim 17 and subject to rejection under § 103(a), are divisible into two groups: claim 6 represents claims which specify the configuration of but not the dimensions of the through-holes in the mold; and claims 15 and 16 specify the dimensions of the through-holes in the mold.

With respect to claims 6, 15, and 16, Appellants submit that the Examiner erred in concluding that Leonhardt would have suggested that the configuration of holes 46 would have been a matter of design choice and the size of holes 46 would have been a matter of optimization. According to Appellants, Leonhardt's teaching that air escapes through holes 46 would have led this person away from through-holes that permit water to enter as claimed in these claims. App. Br. 14-15; *see* Supp. Ans. 4-5 and 7. Appellants further argue with respect to claim 15, that the specified hole sizes facilitate the function of liquid heating fluid entering to contact the parison, and exiting the mold as claimed. App. Br. 14-15; Reply Br. 4.

On this record, we cannot agree with Appellants that the Examiner erred in concluding that one of ordinary skill in this art would have used different configurations of holes 46 in routinely following Leonhardt's

teachings. We are of the opinion that one of ordinary skill in the art would not have been led away from different configurations of holes 46 because this person would have reasonably expected that different configurations of the holes would permit air to escape the mold. As we explained above, holes 46 would permit water to enter the immersed mold and contact the parison to some extent, leaving air to be expelled, along with the water, by the expanding parison as taught by Leonhardt. *See above* p. 4. Indeed, claim 6 requires no more than this in the same respects as claim 17 on which it depends. *See above* p. 4.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in Leonhardt with Appellants' countervailing evidence of and argument for nonobviousness and conclude, by a preponderance of the evidence and weight of argument, that the claimed invention encompassed by appealed claims 6 and 10-12 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

We do not reach the same conclusion with respect to claims 15 and 16. We agree with Appellants that the Examiner erred because the dimensions of the through-holes specified in claim 15 would permit heated liquid fluid to enter and completely fill the mold, leaving no air to be expelled which is contrary to Leonhardt's teachings. Claim 16 specifies the dimensions of through-holes in similar manner to claim 15. Accordingly, we reverse this ground of rejection with respect to claims 15 and 16.

### III

In the third ground of rejection, the combination of Leonhardt and Gass-Erb is applied to claim 18 which limits the method of claim 17 by specifying that the heated fluid in which the mold is immersed is agitated.

Appellants submit that the Examiner erred in combining Leonhardt and Gass-Erb because “[i]n Gass-Erb the immersed object is a heater that also performs the agitation, not some additional object analogous to a balloon mold.” App. Br. 16; Reply Br. 4-5. We disagree. We find that Gass-Erb teaches that the immersion heater having mixing device 8 “provides for an optimum and equal temperature distribution throughout the fluid” of the water bath. Gass-Erb col. 1, 50-54, col. 2, ll. 61-65, and Fig. 1. We thus agree with the Examiner’s conclusion that the teachings of Gass-Erb would have led one of ordinary skill in the art to combine this reference with Leonhardt and thence to the use of Gass-Erb’s mixing device to agitate Leonhardt’s hot water bath in which the mold is immersed in the expectation of keeping the bath in a particular temperature range as taught by Leonhardt. Supp. Ans. 5-6 and 8. *See, e.g., KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 415-16 (2007) (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”); *See, e.g., In re Kahn*, 441 F.3d 977, 985-88 (Fed. Cir. 2006).

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Leonhardt and Gass-Erb with Appellants’ countervailing evidence of and argument for nonobviousness and conclude, by a preponderance of the evidence and weight of argument, that the claimed



invention encompassed by appealed claim 18 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

#### IV

In the fourth ground of rejection, the combination of Leonhardt and Garrett is applied to claim 19 which limits the method of claim 17 by specifying that the molding apparatus is vibrated while the mold is immersed.

Appellants submit that the Examiner erred in combining Leonhardt and Garrett because Garrett is non-analogous art pertaining “to a method of heating food containers submerged or partially submerged and running on a conveyer belt” where “[a] vibrator unit vibrates the pool of heat transfer liquid, the conveyor and the containers.” App. Br. 18; Reply Br. 5. We disagree. We find that Garrett teaches that vibrator unit 70 vibrates the conveyor components 40, 20, the pool of heat transfer liquid 32, and product pouches 30, and the agitating of the product within the pouch containers effects more uniform heat transfer. Garrett col. 3, ll. 1-7, col. 4, ll. 47-51, and Fig. 1. On this basis, we thus agree with the Examiner’s conclusion that the teachings of Garrett would have led one of ordinary skill in the art to combine Garrett with Leonhardt and thence to the use of Garrett’s vibrator unit to vibrate Leonhardt’s hot water bath in which the mold is immersed in the reasonable expectation of keeping the bath in a particular temperature range as taught by Leonhardt. Supp. Ans. 6 and 8. *See, e.g., KSR*, 550 U.S. at 415-16; *Kahn*, 441 F.3d at 985-88.

Thus, contrary to Appellants’ position, we determine the problem of uniform heating of the water bath in which Leonhardt immerses the mold

and Garrett's method of vibrating an apparatus to effect uniform heating in an immersed container would have commended Garrett's vibrator unit to the attention of one of ordinary skill in this art faced with uniform bath heating in Leonhardt even though Garrett is in an unrelated area of endeavor. *See, e.g., In re Clay*, 966 F.2d 656, 659-60 (Fed. Cir. 1992).

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Leonhardt and Garrett with Appellants' countervailing evidence of and argument for nonobviousness and conclude, by a preponderance of the evidence and weight of argument, that the claimed invention encompassed by appealed claim 19 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

The Primary Examiner's decision is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

**AFFIRMED-IN-PART**

tc

VIDAS, ARRETT & STEINKRAUS, P.A.  
SUITE 400  
6640 SHADY OAK ROAD  
EDEN PRAIRIE, MN 55344